

PATENT APPLN. NO. 09/963,463
RESPONSE UNDER 37 C.F.R. § 1.116

**PATENT
FINAL**

REMARKS

The claims have been amended in light of a telephone interview with the Examiner, Ms. Tracy Mae Dove, on May 13, 2004. During the interview the final rejection of the claims 1-3 under 35 U.S.C. §103(a) as being unpatentable over the Numata et al. references (WO 00/13250 and EP 1 117 145) ("Numata") was discussed.

In the Final Action it is the position of the Office that the comparative data in the application that was explained in the response to the first Action are insufficient to rebut the Examiner's case of prima facie obviousness. It appeared, however, that there may have been a misunderstanding concerning the comparative data and, thus, the telephone interview was requested. Prior to the interview, the undersigned sent an unofficial letter to the Examiner, Ms. Dove, on May 11, 2004, commenting on the positions taken in the Action. The positions in the Action and the comments of the undersigned in the letter dated May 11, 2004, are discussed below.

First, it is stated in the Action that the data of the application and, particularly, the data for Invention Cell 4 and Comparative Cell 2, do not show that the amount of nickel in $\text{LiNi}_{1-x-y}\text{Co}_x\text{Mn}_y\text{O}_2$ results in improved power characteristics when the data for Invention Cell 4 and Comparative Cell 1 are considered. It was

PATENT APPLN. NO. 09/963,463
RESPONSE UNDER 37 C.F.R. § 1.116

**PATENT
FINAL**

further stated that both cells have the same proportion of nickel, but significantly different power characteristics. The undersigned explained in the May 11 letter that this position was not understood because Invention Cell 4 has significantly improved power characteristics as compared to Comparative Cell 1. Additionally, the amount of nickel cannot be considered alone. The claims require and the data show that two relationships must be satisfied, i.e., $0.5 < x + y < 1.0$ and $0.1 < y < 0.6$, where "x" represents the amount of Co and "y" represents the amount of Mn. Comparative Cell 1 not does not satisfy the second relationship, i.e., $0.1 < y < 0.6$, since the amount of Mn ("y"), is only 0.1. To satisfy the second relationship "y" must be greater than 0.1.

Second, it is stated in the Action that the data of Tables 6-8 cannot show unexpected results because invention cells 0-12 were fabricated using only $\text{LiNi}_{(1-x-y)}\text{Co}_x\text{Mn}_y\text{O}_2$ of different compositions as the positive electrode active material. In the May 11 letter, the undersigned explained that this position was not correct because page 10 of the specification clearly explains that the positive electrode active material of each of invention cells 0-12 was a 1:1 mixture of $\text{LiNi}_{(1-x-y)}\text{Co}_x\text{Mn}_y\text{O}_2$ and LiMn_2O_4 .

During the telephone interview on May 13, 2004, Ms. Dove agreed that the data of Tables 6-8 are proper comparative data

PATENT APPLN. NO. 09/963,463
RESPONSE UNDER 37 C.F.R. § 1.116

**PATENT
FINAL**

because the positive electrode active material of each of the cells was a 1:1 mixture of $\text{LiNi}_{(1-x-y)}\text{Co}_x\text{Mn}_y\text{O}_2$ and LiMn_2O_4 . However, she explained that she does not believe that the data of Tables 6-8 are sufficient to rebut her case of prima facie obviousness because the data are not commensurate in scope with the claims.

First, she noted that the invention cells and comparative cells were prepared using LiMn_2O_4 . She advised that unless the lithium-manganese composite oxide recited in the claims is limited to LiMn_2O_4 , the comparative data will not be sufficient to rebut her case of obviousness.

Second, she noted that the amounts of Ni, Co and Mn of the lithium-nickel-cobalt-manganese composite oxide used in the positive electrode of the invention cells of Tables 6-8 are not commensurate in scope with the limitations recited in the claims. For example, the amount of Mn (i.e., "y") used in the invention cells identified in Tables 6-8 ranges from 0.2 to 0.5. However, "y" is defined in the claims as being $0.1 < y < 0.6$. Similar considerations apply to the amount of Co.

The undersigned understood from the discussions with the Examiner, Ms. Dove, during the telephone interview that she is ready to allow the claims if the claims are amended to limit the lithium-manganese composite oxide to LiMn_2O_4 , if the definition of

PATENT APPLN. NO. 09/963,463
RESPONSE UNDER 37 C.F.R. § 1.116

**PATENT
FINAL**

"y" is changed to " $y = 0.2$ to 0.5 " to reflect the amount of Mn of the lithium-nickel-cobalt-manganese composite oxide used in the positive electrode of the invention cells of Tables 6-8, and if a definition of "x" as being " $x = 0.1$ to 0.6 " is added to the claims to reflect the amount of Co of the lithium-nickel-cobalt-manganese composite oxide used in the positive electrode of the invention cells of Tables 6-8. The claims have been amended above to include these changes. It is noted that the definition " $0.5 < x + y < 1.0$ " has been retained since this definition limits the relative amounts of "y" and "x" and that, in view of this definition, it does not appear necessary to add a definition of " $1 - x - y$ ".

The claims are now believed to be in condition for allowance and a notice of allowability is believed to be in order.

The foregoing is believed to be a complete and proper response to the Office Action dated February 17, 2004, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of

PATENT APPLN. NO. 09/963,463
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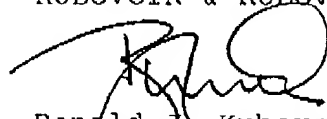
PATENT
FINAL

time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,

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